

"and" as "or", and such is contrary to the plain language of the statute. The undersigned requests that the examiner provide appropriate judicial support that the term "and" may be interpreted as "or". It is further requested that the election requirement be withdrawn. In the alternative it is submitted that all of claims 1-8, 11-12, 15-16 and 19-20 be considered to be within the elected species and claim grouping.

The drawings have been objected to under 37 CFR 1.83 (a). It is submitted that this objection is not well taken and should be withdrawn. The claims pertain to a series of layers which are easily understandable and hence no drawing figures should be required in this case at all. Solely as a convenience, the Applicant has provided thirty-two (32) reference figures to even further ease understanding of the invention. Rather than the case of a complex mechanical device where drawing figures are truly required, this application provided superfluous figures which merely show the flow of layer application. Drawing figure 10 shows the structure claim 23 where the substrate may be considered the lowermost edge of the organic low-k dielectric. The balance of the claims 24-31 merely represent a series of repetitions of the shown layers. Additionally, the sufficiency of these drawing figures has already been accepted by the United States Patent and Trademark Office by the granting of the parent application as U.S. 6,287,955. It is therefore submitted that the drawing figures already show every feature of the invention specified in the claims such that they would be well understood by the skilled artisan. It is therefore requested that the objection to the drawings be withdrawn. In the alternative, it is requested that the objection to the drawing figures be held in abeyance until patentable subject matter is indicated.

Claim 27 has been amended as suggested by the examiner. This change is not made for any reason related to patentability or prior art, but merely for a suggested improvement in clarity.

The examiner has rejected claims 23 and 28-31 under 35 U.S.C. 102 or 103 over Numata, et al. It is respectfully asserted that this ground of rejection has been overcome by the

instant amendment. The claims have been amended to require alternating organic and inorganic layers wherein the inorganic dielectric is selected from the group consisting of hydrogensiloxanes, inorganic hydrogensilsesquioxanes and combinations thereof. Such is not shown or suggested by Numata, et al. The examiner is correct that Numata, et al shows adjacent organic and inorganic dielectric layers, however, their inorganic layer is a fluorinated silicon oxide, aluminum nitride, or titanium nitride and is not taught to be an inorganic hydrogensiloxane or inorganic hydrogensilsesquioxane. It is therefore submitted that this ground of rejection has been overcome.

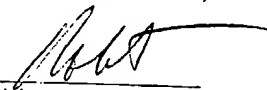
Claims 29-31 stand rejected under 35 U.S.C. 102 over Jin, et al or Havemann, et al. It is respectfully asserted that these grounds of rejection have been overcome by the instant amendment. The claims have been amended to require alternating organic and inorganic layers wherein the inorganic dielectric is selected from the group consisting of hydrogensiloxanes, inorganic hydrogensilsesquioxanes and combinations thereof. Such is not shown or suggested by Jin, et al. The examiner is correct that Jin, et al shows adjacent organic and inorganic dielectric layers, however, their inorganic layer 120 is a  $\text{SiO}_2$  and is not taught to be an inorganic hydrogensiloxane or inorganic hydrogensilsesquioxane. Haveman, et al does not teach an organic layer adjacent to an inorganic layer. Rather, they teach multiple adjacent inorganic layers. For example, Fig. 1e shows an inorganic fluorinated silicon glass layer 150 adjacent to an inorganic hydrogensilsesquioxane 140, adjacent to an inorganic  $\text{SiO}_x\text{F}_x$  layer. Please note that their hydrogensilsesquioxane 140 is not taught to be adjacent to an organic layer. It is therefore submitted that this ground of rejection has been overcome.

Claims 23 and 29-31 stand rejected under 35 U.S.C. 102 over Cronin, et al. It is respectfully asserted that these grounds of rejection have been overcome by the instant amendment. Again, the claims have been amended to require alternating organic and inorganic layers wherein the inorganic dielectric is selected from the group consisting of hydrogensiloxanes, inorganic hydrogensilsesquioxanes and combinations thereof. Such is not shown or suggested by Cronin, et al. The examiner is correct that Cronin, et al shows

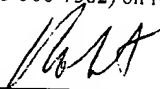
adjacent organic 24 and inorganic 26 dielectric layers, however, their inorganic layer 26 is a SiN and is not taught to be an inorganic hydrogensiloxane or inorganic hydrogensilsesquioxane. It is therefore submitted that this ground of rejection has been overcome.

The undersigned respectfully requests re-examination of this application and believes it is now in condition for allowance. Such action is requested. If the examiner believes there is any matter which prevents allowance of the present application, it is requested that the undersigned be contacted to arrange for an interview which may expedite prosecution.

Respectfully submitted,

  
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Date: November 19, 2001

I hereby certify that this paper is being facsimile transmitted to the Patent and Trademark Office (FAX No. 703-308-7382) on November 19, 2001.

  
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APPENDIXMARKED-UP COPY OF AMENDED CLAIMS

23. (Amended) An integrated circuit structure which comprises a substrate and  
(a) an organic layer on the substrate which comprises a pattern of metal lines on the substrate and an organic dielectric on the substrate between the metal lines; and  
(b) an inorganic layer on the organic layer which comprises an inorganic dielectric selected from the group consisting of hydrgensiloxanes, inorganic hydrgensilsesquioxanes and combinations thereof, having metal filled vias therethrough which connect to the metal lines of the organic layer.

27. (Amended) The integrated circuit structure of claim 25 further comprising an organic dielectric layer on each one or more alternating inorganic layer (d) between the vias and under the additional metal lines of the alternating organic layer; and an inorganic dielectric on [the] each one or more organic dielectric layer between the additional metal lines of the additional organic layer.

29. (Amended) A dielectric coated substrate which comprises:  
(a) a first dielectric composition film on a substrate; and  
(b) a second dielectric composition film on the first dielectric composition film;  
wherein the first dielectric composition and the second dielectric composition have substantially different etch resistance; wherein either the first dielectric composition film is organic and the second dielectric composition film is inorganic; or the first dielectric composition film is inorganic and the second dielectric composition film is organic; and wherein the inorganic dielectric composition film comprises an inorganic dielectric selected from the group consisting of hydrgensiloxanes, inorganic hydrgensilsesquioxanes and combinations thereof.

32. (New) The integrated circuit structure of claim 23 wherein the hydrogensiloxanes have the formula  $[(\text{HSiO}_{1.5})_x\text{O}_y]_n$ , and the hydrogensilsesquioxanes have the formula  $(\text{HSiO}_{1.5})_n$ , wherein  $x$ = about 6 to about 20,  $y$ =1 to about 3, and  $n$ =1 to about 4,000.

33. (New) The dielectric coated substrate of claim 29 wherein the hydrogensiloxanes have the formula  $[(\text{HSiO}_{1.5})_x\text{O}_y]_n$ , and the hydrogensilsesquioxanes have the formula  $(\text{HSiO}_{1.5})_n$ , wherein  $x$ = about 6 to about 20,  $y$ =1 to about 3, and  $n$ =1 to about 4,000.

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